REMARKS

Reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

The Board of Patent Appeals by their decision of April 16, 2007 affirmed the 35 USC §103(a) rejection of claim 25 for obviousness in view of Valentini and Dorigatti and reversed the 35 USC 112, paragraph 1 rejection.

By this amendment claims 25, 31, 32, 34 and 39-44 have been amended and claim 33 has been cancelled. These amendments are fully supported in the as filed specification.

In claims 25, 34, 39-44 the matrices are limited to perforated membranes and continuous membranes. Support for *"continuous membranes"* is to be found on page 5, line 11, of the as-filed specification.

Independent claim 25 now only recites to the use of bi-dimensional matrices containing hyaluronic acid derivatives and processed in the form of membranes, both continuous and perforated.

In claim 25, lines 2-3, the expression *"and morphological differentiation"* is introduced after the term *"growing"* to highlight the technical effect which was observed for the claimed matrices and to support the inventiveness of their use for the growing of intestinal cells. Support for this expression can be found in the as-filed specification, in the Example, at page 7, lines 1 and ff., and in Figure 3.

Moreover, amended claim 25 is directed to the use of these membranes as scaffolds for growing intestinal cells thus obtaining a material suitable for the treatment of ulcers, lesions and diverticula of the digestive and gastrointestinal tract. Claim 25 also makes clear that the intestinal cells grow on the present bi-dimensional membranes and the morphological differentiation of the cells also occurs, in the presence of microvilli on the surface of the cells.

Applicants respectfully traverse the §103(a) rejection.

Valentini et al. disclose porous scaffolds made of hyaluronic acid derivatives and having interconnected pores and a void volume of 40-90%. The main application of these scaffolds is in tissue repair, in particular bone loss repair of small areas (see

Valentini et al., Examples 3 and 4, col. 11 and 12). Other applications, such as the repair of intestinal ulcers, are only cited amongst many other different applications and no examples are provided.

Therefore, Valentini et al. only disclose three-dimensional spongy scaffolds, wherein the interconnected pores are essential to promote the in-growth of cells. They do not, however, disclose or suggest, the making of bi-dimensional scaffolds based on hyaluronic acid derivatives in the form of membranes that do not have interconnected pores (perforated membranes), or do not have pores at all (continuous membranes).

As to Dorigatti et al., the Examiner is asked to take note of the fact that they disclose a multi-layer material containing hyaluronic acid derivatives consisting only of non-woven tissues layers, or consisting of non-woven tissues layers and a perforated membrane. This material is disclosed by Dorigatti et al. as skin coverage for repairing wounds. Intestinal cells are not mentioned at all. Also, scaffolds in the form of membranes which are not stuck together with non-woven matrices are neither disclosed nor even suggested.

Even assuming that Valentini et al. teach the growing of intestinal cells on a hyaluronic acid derivatives scaffold, a combination of the above teachings of Valentini et al. and Dorigatti et al. could provide a hint to a skilled person to grow intestinal cells on three-dimensional multi-layer non-woven scaffolds, or on three-dimensional non-woven scaffolds combined with a perforated membrane, but would not suggest the use of a bi-dimensional scaffold made of a single membrane, perforated or continuous.

Contrary to what is disclosed by Valentini et al. and Dorigatti et al. and their combined teachings, applicants have found that intestinal cells can grow on bi-dimensional scaffolds in the form of membranes, and they also undergo morphological differentiation with the formation of microvilli on their surface. Furthermore, applicants have also found an increase in the ALP (alkaline phosphatases) activity for the cells grown on membranes, which is higher than that observed for many other types of scaffolds.

In particular, the Examiner is asked to take note that applicants have compared many types of scaffolds, assessing both the morphological differentiation and the increase of ALP activity, which is an index of biochemical differentiation. As shown in the

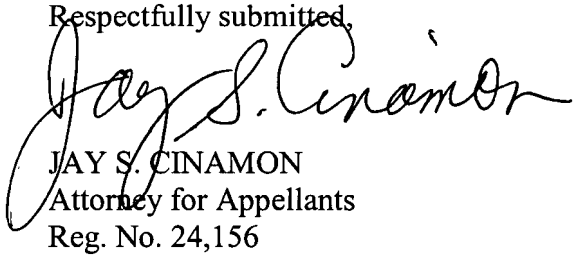
Example at page 7 and in the Figures of the as filed specification, both parameters are unexpectedly better for the bi-dimensional matrices than for the other matrices. In particular, three-dimensional matrices in the form of non-woven fabrics do not show microvilli on the surface of cells grown thereon, and the increase of ALP activity is lower than that observed for membranes.

In view of the foregoing prior art disclosures, wherein three-dimensional matrices were essential for growing cells, the results obtained herein for bi-dimensional matrices was, indeed, completely unexpected. Accordingly, the inventiveness of the present claims, now limited to bi-dimensional matrices in the form of membranes, should be acknowledged by the withdrawal of the §103(a) rejection and the allowance of the application.

The issuance of a Notice of Allowance is respectfully solicited.

Please charge any fees which may be due to our Deposit Account No. 01-0035.

Respectfully submitted,



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